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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,310	11/25/2003	Mario Busshoff	DAY 0743 VA/40195.811	9317
23368 7590 02/08/2007 DINSMORE & SHOHL LLP ONE DAYTON CENTRE, ONE SOUTH MAIN STREET SUITE 1300 DAYTON, OH 45402-2023			EXAMINER MCNALLY, DANIEL	
			ART UNIT 1733	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/722,310	<b>Applicant(s)</b> BUSSHOFF ET AL.	
	<b>Examiner</b> Daniel McNally	<b>Art Unit</b> 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office action is a response to the amendment filed 11/27/2006.

#### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-3 and 5-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. [US5840386] (of record, previously cited) in view of van Weperen et al. [US2001/0046575] (newly cited).

Hatch discloses a method for making a liquid transfer sleeve. The method comprises providing a mandrel or "cylindrical support," applying an inner skin or "base sleeve" to the mandrel, applying a compressible intermediate layer to the inner skin, applying a metal outer tube to the intermediate layer, and machining the outer surface to a desired size (column 4, lines 6-11). Hatch discloses the inner skin comprises a reinforced plastic material, and provides the example of a resin impregnated glass fiber material (column 5, lines 13-21). The inner skin also has a desired wall thickness of 0.6 to 1mm (column 5, lines 22-37). Hatch discloses curing the compressible layer and machining the outer surface of the sleeve to finish the final product (column 8, lines 28-39). Hatch discloses polymerizing the inner skin by any conventional manner and that the inner skin may also be a prefabricated sleeve. However, Hatch does not disclose any specifics as to how the inner skin is formed, such as working, or grinding the inner skin.

Van Weperen discloses a method of making a thin walled cylinder of fiber-reinforced material for a printing sleeve. The disclosed materials for the fiber-reinforced material are the same as the materials disclosed for the inner skin (paragraph 0048). Van Weperen discloses forming the fiber-reinforced laminate using a variety of techniques including a process of machining or grinding the surface of the fiber-reinforced layer (paragraph 0056).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hatch to include a machining or grinding process as taught by van Weperen in order to the inner skin is within the desired wall thickness specifications as set by Hatch.

With regard to claim 2, van Weperen discloses a method forming the fiber41-reinforced plastic layer comprising winding the fiber around a mandrel (paragraph 0056).

With regard to claim 3 and 5, Hatch discloses the inner skin comprising glass or carbon fiber fabric impregnated with resin. Hatch does not limit the fabric to a woven or non-woven orientation. In any event, van Weperen discloses the fibers of the fiber-reinforced layer can have a woven or braided fabric orientation (paragraph 0033).

With regard to claim 6, Hatch discloses machining the outer surface to a desired thickness (column 4, lines 6-11 and column 8, lines 35-39).

With regard to claim 7, van Weperen discloses forming the fiber-reinforced layer by a pultrusion technique (paragraph 0056). It is intrinsic that the mandrel on which the

layer is formed is part of a forming die because the final product is hollow and the mandrel forms the inner surface of the product.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch in view of van Weperen further in view of Francis. [US2614058] (newly cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. The references used in paragraph 3 disclose forming a fiber reinforced resin sleeve by winding a fibrous material impregnated with a resin around a mandrel. The references do not disclose coating the mandrel with a resin and applying the fibrous material to the resin coating.

Francis discloses a method of fabricating a hollow fiber reinforced plastic article. Francis discloses that it is known to wrap or wind a fibrous material impregnated with an uncured resin around a mandrel to build up a wall structure (column 1, lines 6-34). Note, Francis recites the above method results in trapped air in the fiber reinforced resin layer. The trapped air can cause decreased strength or porosity in the structure. Francis teaches an alternative method of forming a fiber reinforced plastic layer comprising the steps of providing a mandrel, coating the mandrel with resin material and applying a filament reinforcing material to the resin coating (column 3, lines 10-44). The application of the reinforcing material causes the resin to seep between the reinforcing filaments, sufficiently coating the filaments without forming trapped air in the article.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the fiber reinforced plastic layer forming method of the references

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used in paragraph 3 by using the method as taught by Francis comprising coating the mandrel with resin and applying fibrous material to the resin coating in order to eliminate any air trapped in the layer that may decrease the strength of the final layer.

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch in view of van Weperen further in view of Bresson et al. [US5352507] (newly cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch does not limit the formation of the compressible layer to any particular method. Hatch does not disclose spirally wrapping or wrapping and seaming a compressible sheet material.

Bresson discloses a printing blanket disposed around a cylindrical support and comprising a compressible layer. Bresson discloses forming the layers of the printing blanket, including the compressible layer, by spiral wrapping strip of material as recited in claim 8, or by full width wrapping as recited in claim 9 (column 3, lines 31-39).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Hatch applying the compressible layer by spiral wrapping or wrapping as taught by Bresson in order to form a compressible layer of a uniform desired thickness.

With regard to claim 10, Bresson also discloses an adhesive layer on the inside of the compressible layer (column 4, lines 36-44).

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6. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch in view of van Weperen further in view of Castelli et al. [US5700343] (of record, newly cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch does not limit the formation of the compressible layer to any particular method. Hatch does not disclose forming the compressible layer by spreading an uncured elastomer comprising microspheres.

Castelli discloses a method of forming print roller comprising a compressible layer. The compressible layer is formed on the reinforcing layer by spreading the compressible material, comprising uncured electrometric material and microspheres, over the surface of the rotating sleeve (column 3, lines 10-24).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hatch to include a spreading of the compressible layer as taught by Castelli in order to control the thickness and uniformity of the compressible layer.

With regard to claim 12, Castelli discloses the sleeve is rotated while being coated.

With regard to claim 13, Castelli also discloses curing the cylindrical compressible laminate on the sleeve.

7. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. in view of van Weperen et al. and further in view of Lane et al. [US5983799] (newly cited) and Fan et al. [EP0766142A1] (newly cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch discloses an outer layer formed of a metal material. Hatch does not disclose making the outer layer of a photocurable material. Hatch also does not disclose applying the photocurable material by spirally wrapping, wrapping and seaming, spreading, dipping, casting or molding.

Lane discloses a replaceable sleeve for printing applications such as a flexographic print sleeve mounted on a mandrel (column 1, lines 14-39). Lane discloses that the outer layer is known to be made of a metal sleeve. However polymeric layers offer the advantage of flexibility that is not found in metal sleeves (column 1, lines 40-56). Lane further discloses applying the polymeric outer layer, curing the layer and working the layer.

Fan '142 discloses a flexographic printing, which may be formed in sheet form or a continuous cylindrical form (page 2, lines 11-29). Fan '142 discloses that the outer layer is formed of a photosensitive thermoplastic seamless layer. The photosensitive thermoplastic layer is expandable and contractible (page 3, line 54 – page 4, line 7).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Hatch by substituting the metal outer layer for a photosensitive



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thermoplastic layer as taught by Lane and Fan '142 in order to make an outer layer that is flexible, expandable and contractible.

With regard to claim 14, Fan '142 discloses the method of winding or "spirally wrapping" the photosensitive sheet material around the outside of the cylinder (page 2, lines 55-58).

With regard to claim 15, Fan '142 discloses the method of wrapping and seaming the photosensitive sheet material around the outside of the cylinder (page 2, lines 35-44).

With regard to claim 16, Fan '142 discloses the method of extruding and calendaring the photosensitive sheet material around the outside of the cylinder (page 2, lines 19-29). Furthermore, Lane also discloses forming the outer layer by extruding and calendaring (column 5, lines 49-52).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. in view of van Weperen et al., Lane et al. and Fan et al. and further in view of Rossini et al. [US20020069777] (newly cited).

Hatch as modified discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 7 above for a detailed discussion of Hatch as modified. The references used above disclose several method of forming the photosensitive outer layer. The references do not disclose rotating the cylinder while the photosensitive layer is being applied.

Rossini discloses an alternate method of applying a photopolymer layer to a cylindrical printing substrate. The method comprises spraying the photopolymer material while the cylinder is being rotated as shown in Figure 2.

It would have been obvious to one of ordinary skill in the art at the time of invention to use an alternative method of applying the photosensitive material of the references used in paragraph 7 as taught by Rossini in order to make a uniform and seamless photosensitive outer layer.

9. Claims 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. in view of van Weperen et al. and further in view of Julian [US4144813] (newly cited) and Okubo et al. [US5884559] (previously cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch discloses that the outer layer is formed of metal, however it is also disclosed that it is known in the art to use a rubber material for the outer layer (column 2, line 49 – column 3, line 9). Hatch cites Julian (cited herein) as an example of a printing sleeve comprising a rubber outer layer. One of ordinary skill in the art would have known to use a rubber outer layer as an alternative material for forming a printing sleeve. Hatch and Julian do not disclose any particular method of forming the rubber outer layer.

Okubo '559 discloses a method of making a seamless cylindrical printing blanket comprising an outer layer formed of rubber material. With regard to claim 18, Okubo discloses winding a rubber sheet material around the printing cylinder to form a rubber

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outer layer (column 8, lines 3-12). With regard to claim 21, Okubo discloses the method comprising a step of forming the outer layer by using a rotational spreading machine to spread the rubber layer on the outer surface of the cylinder (column 13, lines 5-22)

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of the references used in paragraph 3 to include a outer layer forming method as taught by Okubo '559 in order to form a printing surface layer free of seams.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. in view of van Weperen et al. and further in view of Julian [US4144813] (newly cited) and Okubo et al. [US6782820] (previously cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch discloses that the outer layer is formed of metal, however it is also disclosed that it is known in the art to use a rubber material for the outer layer (column 2, line 49 – column 3, line 9). Hatch cites Julian (cited herein) as an example of a printing sleeve comprising a rubber outer layer. One of ordinary skill in the art would have known to use a rubber outer layer as an alternative material for forming a printing sleeve. Hatch and Julian do not disclose any particular method of forming the rubber outer layer.

Okubo '820 discloses a method of making a printing cylinder comprising a surface printing rubber layer. Okubo '820 teaches wrapping of a sheet-like blanket and joining of each end of the blanket at a joint or "seam."

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of the references used in paragraph 3 by using the wrapping and seaming method of Okubo '820 in order to increase production speed by applying an imageable surface layer that is already formed and does not require further curing time.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al. in view of van Weperen et al. and further in view of Julian [US4144813] (newly cited) and Gayle et al. [US6401613] (previously cited).

Hatch as modified by van Weperen discloses a method of making a liquid transfer sleeve. The applicant is referred to paragraph 3 above for a detailed discussion of Hatch as modified. Hatch discloses that the outer layer is formed of metal, however it is also disclosed that it is known in the art to use a rubber material for the outer layer (column 2, line 49 – column 3, line 9). Hatch cites Julian (cited herein) as an example of a printing sleeve comprising a rubber outer layer. One of ordinary skill in the art would have known to use a rubber outer layer as an alternative material for forming a printing sleeve. Hatch and Julian do not disclose any particular method of forming the rubber outer layer.

Gayle discloses a method of forming a printing cylinder. Gayle's method comprises forming the outer sleeve by extrusion (column 3, lines 31-40). Gayle further teaches a method of assembling the print sleeve by mounting the outer sleeve to a compressible inner sleeve by a slip fit (column 2, lines 61-67).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of the references applied in paragraph 3 by using the method of applying the outer layer as taught by Gayle in order to reduce production time by avoiding the vulcanizing time of the imageable surface layer on the print cylinder.

### ***Response to Arguments***

12. Applicants' amendments to the specification are noted and the objections to the drawings and specification are withdrawn.
13. Applicants' amendment to Claim 12 is noted and the rejection of Claims 12 and 13 under 35 USC § 112 is withdrawn.
14. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

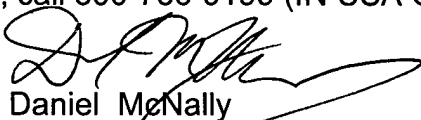
### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel McNally whose telephone number is (571) 272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Daniel McNally  
Examiner  
Art Unit 1733

  
JEFF H. AFTERGUT  
PRIMARY EXAMINER  
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dpm  
January 22, 2007